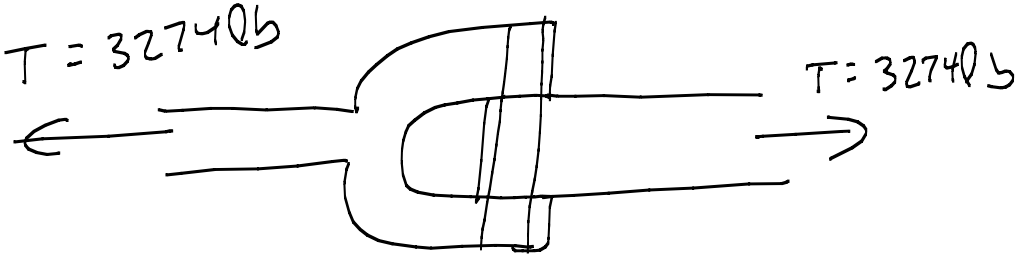
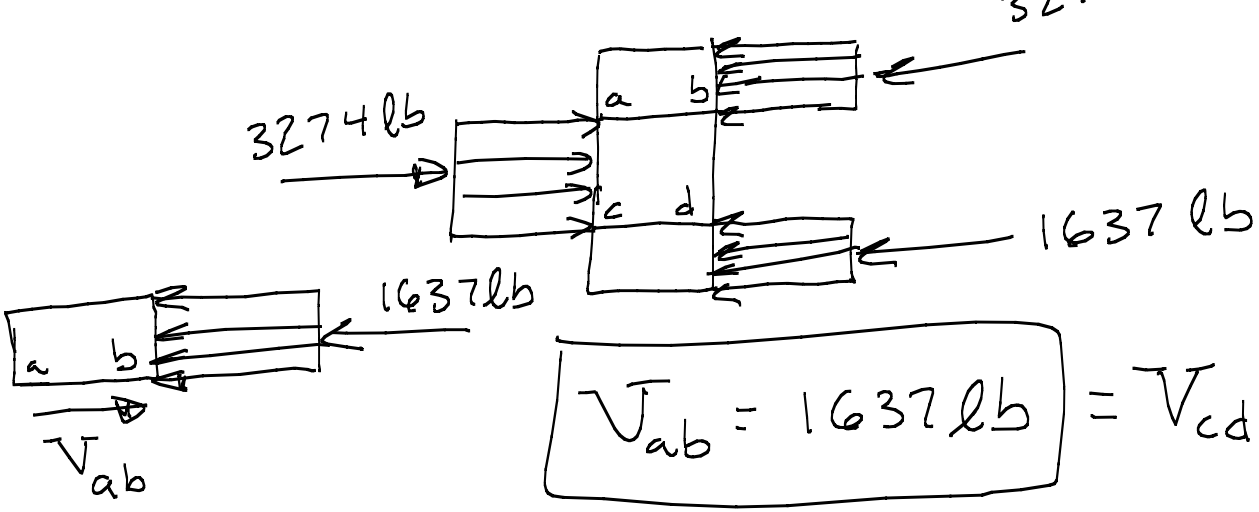
Problem 2

$A_{pin} = 0.385\,in^2$, $d_{pin} = 0.70\,in$

Plate is 4in thick



Determine: Shear Stress in the pin and the bearing stress on the plate



$$V_{ab} = 1637\,lb = V_{cd}$$

$$\tau_{avg} = \frac{V}{A} = \frac{1637\,lb}{0.385\,in^2} = 4252\,psi$$

$$\sigma_b = \frac{F_b}{A_b} = \frac{3274\,lb}{(0.70in)(4in)} = 1169\,psi$$

(0.70in: diameter of the pin (Given))